

U.S. Department of Agriculture
Forest Service
Rocky Mountain Region - Region 2



Medicine Bow—Routt National Forests
And
Thunder Basin National Grassland

PARKS RANGER DISTRICT

Road Construction/Reconstruction Drawings
For

**ENCAMPMENT REOFFER
TIMBER SALE**

Prepared By: Dana R Bardsley
for Anne Haverhals, Engineer

Date: 4-16-2013

Reviewed By: Gary Gray
Gary Gray, Zone Engineer

Date: 04-03-2013

Dana R Bardsley
Dana Bardsley, Forest Engineer

Date: 4-16-2013

Michael J. He
Mike Wright, District Ranger

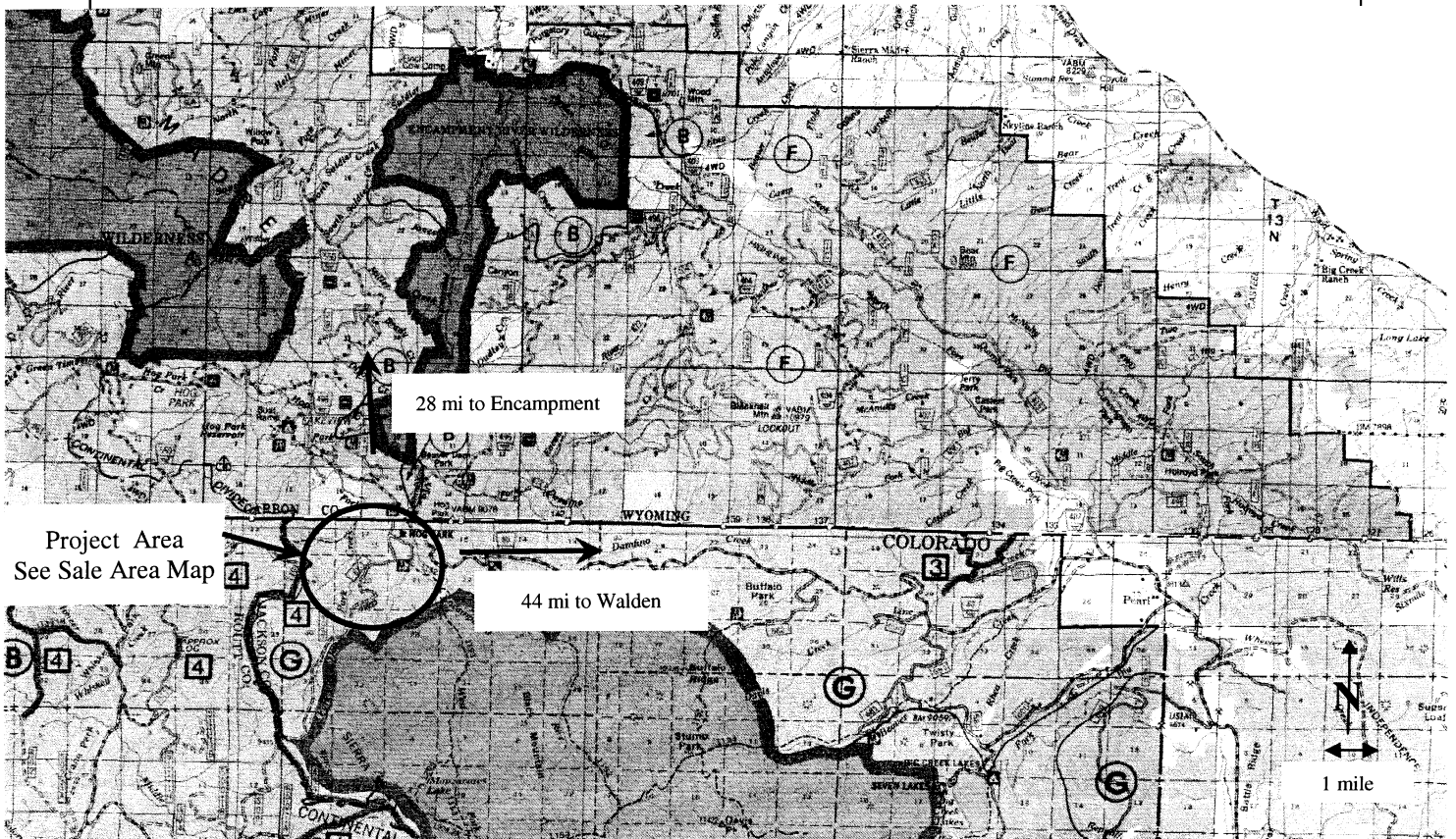
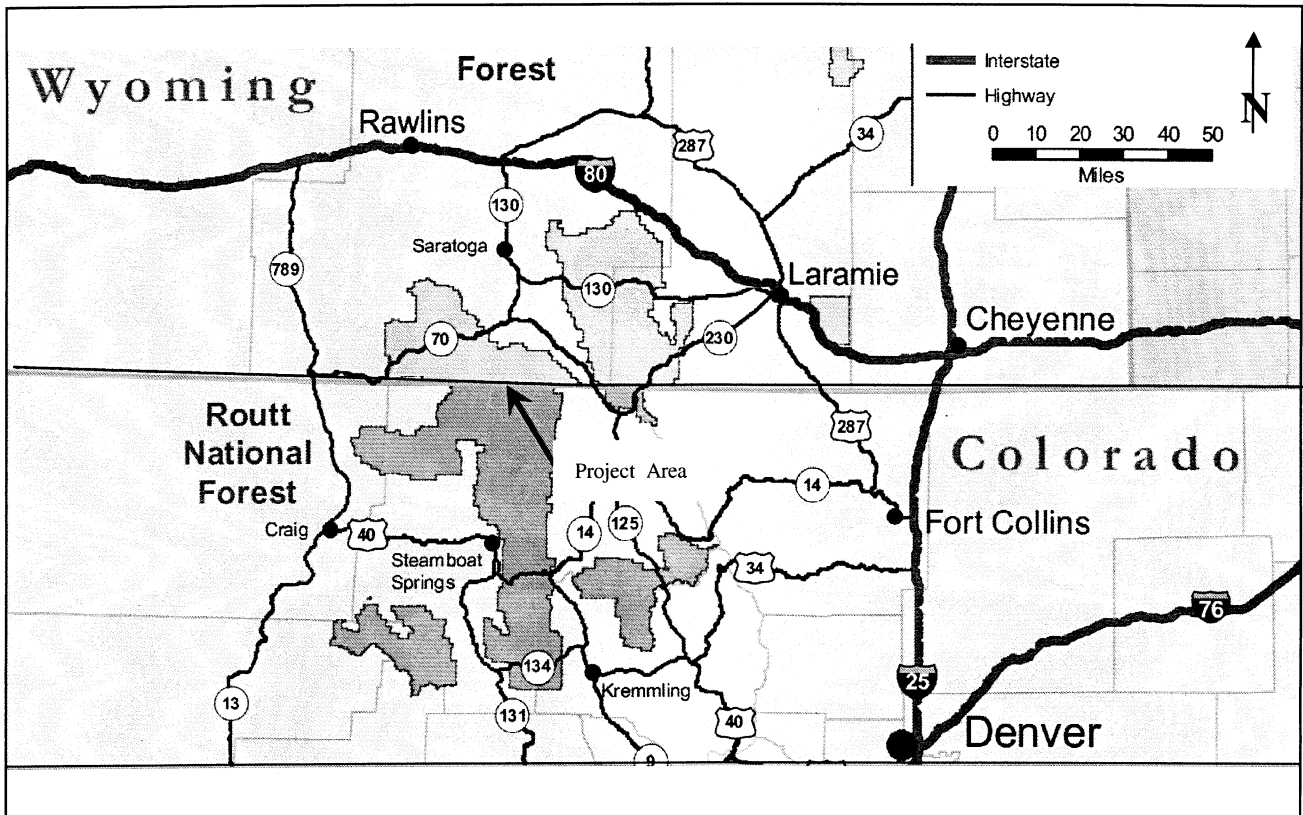
Date: 4.12.13

Phil Cruz
Phil Cruz, Forest Supervisor

Date: 4-16-2013

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ROAD LISTING

	Station to Station	Construction	Reconstruction
NFSR	Feet	Miles	Miles
82.1	9+00 to 9+50		0.01
	23+50 to 126+50		1.95
82.1A	17+00 to 17+50		0.01
499.1	0+00 to 11+00		0.21

Total Miles Construction	0.00	
Total Miles Reconstruction		2.18

Estimate of Quantities

ITEM NO.	DESCRIPTION	METHOD OF MEASURE	UNIT	REVISION DATE	QUANTITIES		
					82.1	82.1A	499.1
					1.95	0.01	0.21
151 (01)	Mobilization	LS	Lump Sum		1.00	-	-
204 (04)	Unclassified Borrow, Compaction Method 'C', Finishing Method 'C', Tolerance Class 'K'	CQ	CY		22.00	10.00	-
204 (08)	Select Borrow, Compaction Method 'C', Finishing Method 'C', Type - Pit Run	CQ	CY		-	-	5.00
204 (13)	Drainage Excavation, Type - LeadOut/LeadIn Ditch	CQ	LF		60.00	-	-
204 (26)	Drainage Excavation, Type - Rolling Dip	CQ	Each		15.00	-	-
212 (03)	Linear Grading	CQ	Mile		0.01	-	0.10
650 (02)	Remove and Replace Structure, Gate	AQ	Each		1.00	-	-

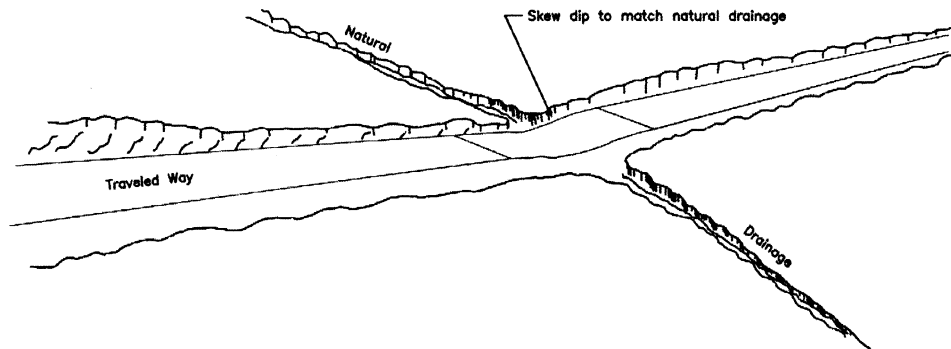
CQ = Contract Quantity, AQ = Actual Quantity, LS = Lump Sum

**POTENTIAL BORROW SOURCE LOCATIONS
FOR PAY ITEM 204(04)**

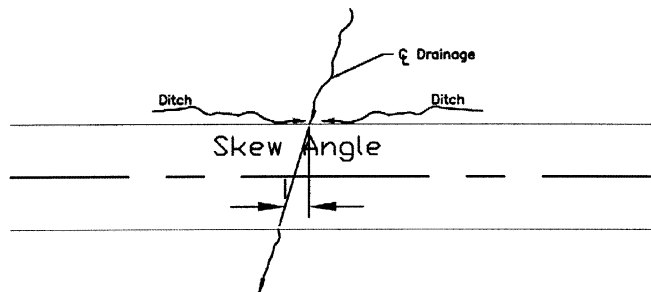
NFSR	Station	Notes
82.1	31+50	Existing TO - utilize cut bank
	54+30	Jnct with closed road - utilize closed road by enhancing closure barriers
	116+70	Existing TO - expand TO
82.1A	11+15	Utilize cutbank

GATE SCHEDULE

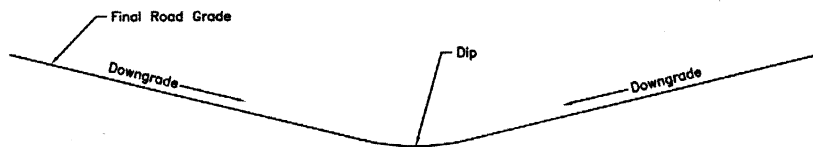
NFSR	Station	Notes
82.1	24+00	Remove and Replace Gate



PERSPECTIVE VIEW



PLAN VIEW

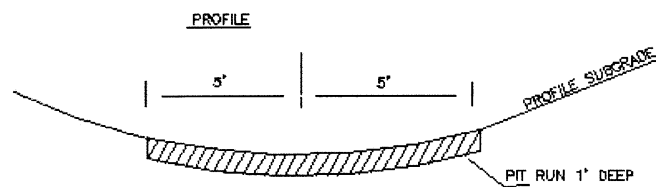


PROFILE VIEW

NOTE:

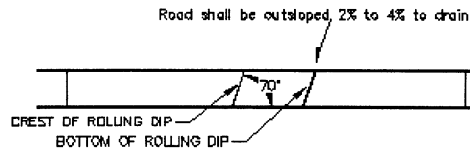
1. Dip shall be outsloped minimum 2%.

STANDARD DETAIL FOR ARMORED GRADE DIP

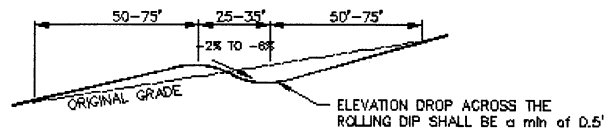


NOTES:

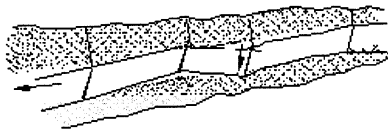
1. WHEN ROLLING DIPS ARE CONSTRUCTED IN DITCH SECTIONS THE DITCH SHALL DRAIN ACROSS THE ROLLING DIP. RESUME DITCH CONSTRUCTION 25' DOWNGRADE FROM THE CREST OF THE ROLLING DIP.
2. OUTLET DRAIN DITCHES SHALL HAVE CUT SLOPES EQUAL TO OR FLATTER THAN 1.5:1. EXCAVATION FROM OUTLET DITCHING SHALL BE WASTED ALONG THE SIDES OF THE DITCH. ALL NECESSARY CLEARING WILL BE TREATED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS.
3. TOLERANCE CLASS THROUGH THE ROLLING DIP SHALL BE CLASS C (203.18).



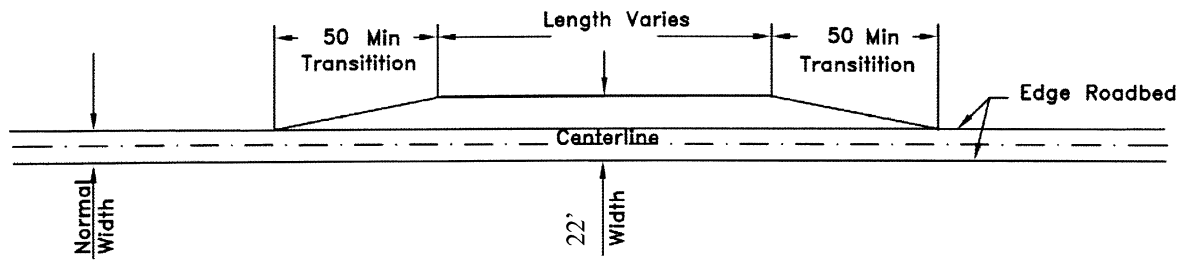
PLAN VIEW



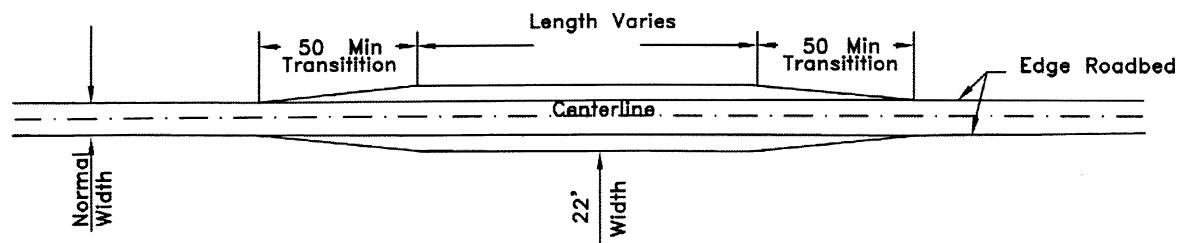
PROFILE ROLLING DIP



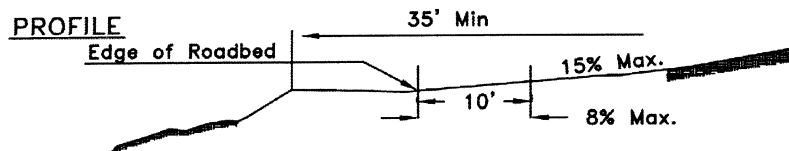
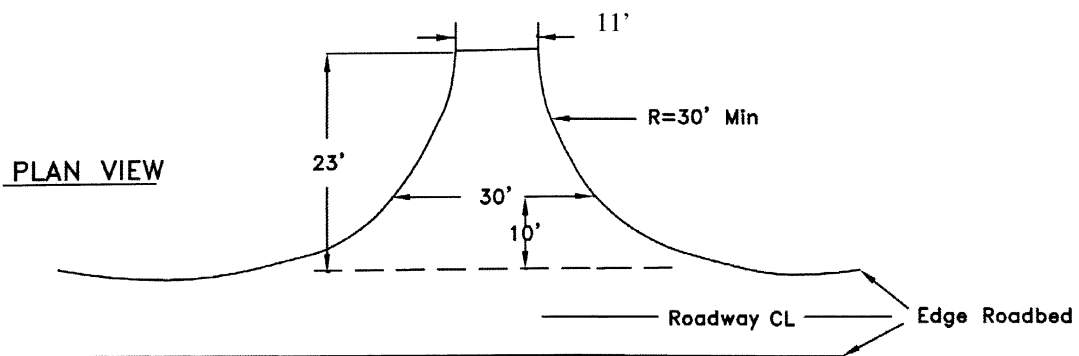
PERSPECTIVE VIEW



PLAN VIEW
TURNOUT-WIDENING ON ONE SIDE

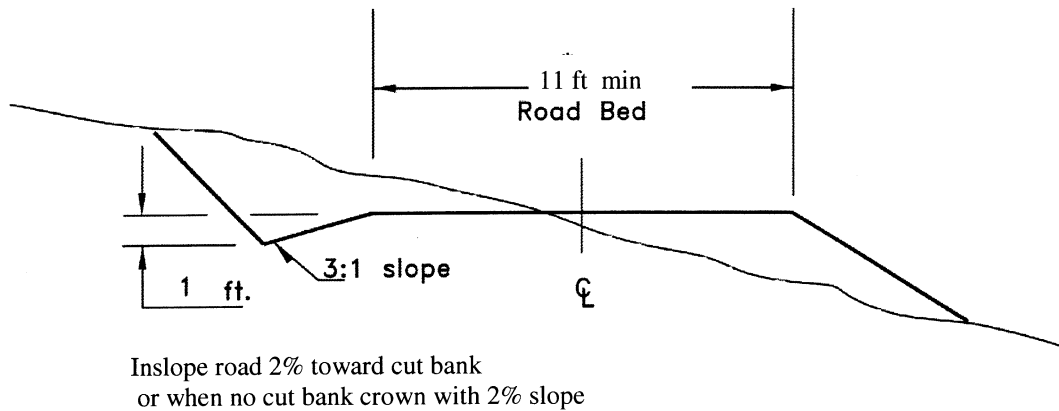
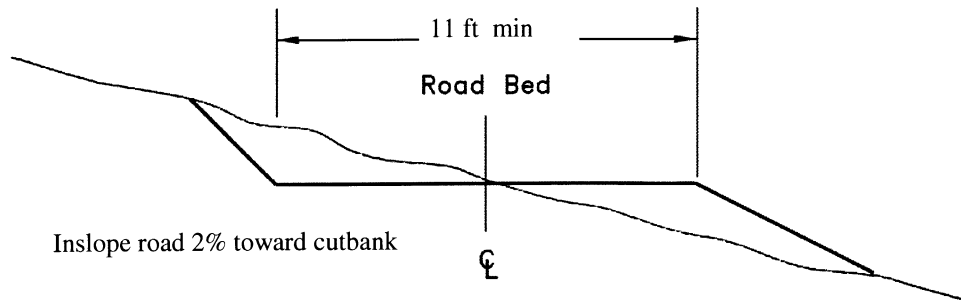


PLAN VIEW
TURNOUT-WIDENING ON BOTH SIDES



NOTE: Turnarounds have been designed so that they may be used as Turnouts for empty log trucks and service vehicles. (Turnaround grade as staked in field)

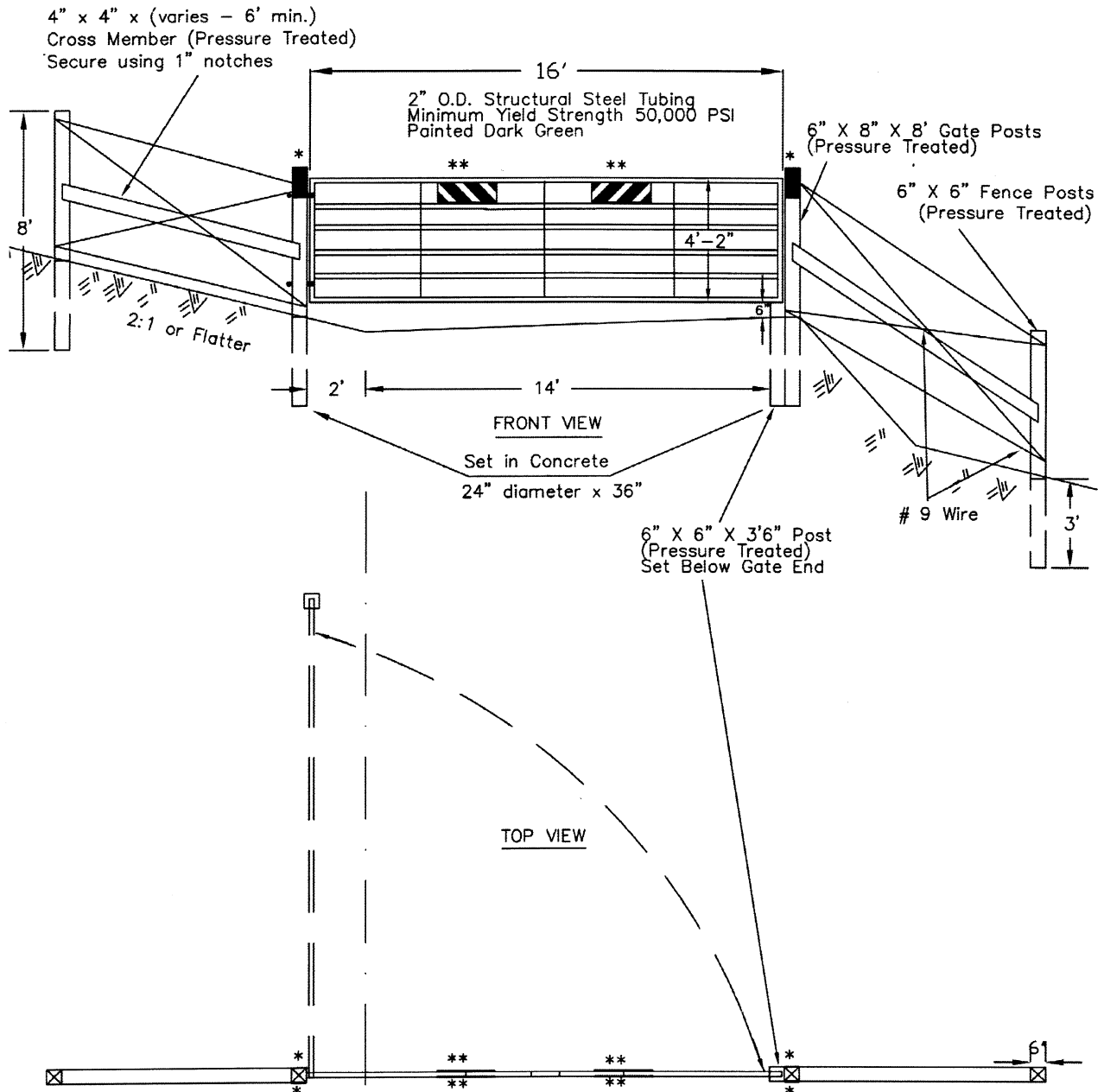
TURNAROUND



1. Cut Slope Horizontal:Vertical 1:1 + tolerance
Fill Slope Horizontal:Vertical 1½ : 1 + tolerance
2. Road Bed width shown is without necessary widening for fill, sluff, curves, and turnouts. Required widening is included in the design and quantity calculations and is shown on the description of work.
3. Clearing limits - If Roadway Excavation, see staking notes.
- If Linear Grading, see Drawing 201-01.
4. Grubbing limits - See specifications.

SIoux 6 RAIL STOCK GATE

(or Approved Equal)



- * 4 ea. - Type 2 Object Marker, Yellow, 6"x12" (OM2-2V)
- ** 2 ea. - Barricade Marker, Red and White, 24"x8" (HOM3-L)
- ** 2 ea. - Barricade Marker, Red and White, 24"x8" (HOM3-R)

Note: Signs will not be salvaged. All signs installed will be new.

All road work herein described in this contract is paid for directly and indirectly under the listed pay items.

Work shall conform to 'Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03'. FP-03 can be downloaded at:
<http://flh.fhwa.dot.gov/resources/pse/specs/fp-03/fp-03usc.pdf>

Section 156 – Public Traffic

- Traffic Control shall conform to Timber Sale provision B6.33.
- Public Travel includes non motorized use, thus gated forest roads shall also conform to Timber Sale provision B6.33.

Section 201– Clearing and Grubbing

- This item is incidental to the associated work's pay item – ie. Ditches, linear grading, gate installation
- Disposal shall be as follows: tops and limbs (f and/or l), logs (f), and stumps (f)
- Clearing in areas with areas receiving no construction/reconstruction is considered 'pre haul maintenance'. (see Timber Sale provision C5.31)

Section 203—Removal of Structures and Obstructions

- Disposal of Slash and Grubbing Material—
 - o Outside of clearing limits, slash shall be left within 24" of the ground and not in piles.

Pay Item 204(04) – Unclassified Borrow, Compaction Method (d), Finishing Method 'C', Tolerance 'K'

- For Forest Service provided borrow sites:
 - o Location will be staked by CO.
 - o Dispose of unsuitable material by scattering on fill side of embankment, or on slopes that do not facilitate material to roll onto roadway or ditches.
 - o Site development/closure is incidental to this pay item.
 - o Side slopes of the borrow site shall conform to roadway embankment slopes shown in typical drawings x (factor of 1.2)
 - o Borrow site shall not impede drainage.
 - o Borrow site in areas of closed roads, shall not reopen road.
- Scarifying roadbed prior to placement is not required.
- Payment is measured as 'material in place' in designated areas.
- Bulldozer finish is acceptable.

Pay Item 204(08) – Select Borrow, Compaction Method (d), Finishing Method 'C', Type—Pit Run

- Source will be commercial
- Acceptance of material will be visual acceptance by the CO. No gradations nor testing required.
- Measurement will be in place. CO shall receive copies of all weight tickets of hauled material & type of material hauled. Each weight ticket will have location of where material was placed written on the ticket.
- Preparation of subgrade and excavation is incidental to pay item.
 - o Dispose of excavated material by scattering on fill side of embankment, or on slopes that do not facilitate material to roll onto roadway or ditches.
- Scarifying roadbed prior to placement is not required.
- Bulldozer finish is acceptable
- Additional locations requiring spot graveling shall be considered 'pre haul maintenance'. (see Timber Sale provision C5.31)
- See Section 703 for material specifications

Pay Item 204(13) – Drainage Excavation, Type - LeadOut/LeadIn Ditch

- Ditch work shall be conducted at culverts, rolling dips, and grade dips 'to be constructed' to make drainage feature functional.
 - Per side of site, if ditch work (lead in, catch basin, or lead out) is less than a total of 20', then ditch work is incidental to the associated pay item.
 - Per side of site, if ditch work is more or equal to 20', then the ditch work shall be paid under Pay Item 204(13)
- Cleaning of existing ditch is considered 'pre haul maintenance'. (see Timber Sale provision C5.31)
- Other types of ditch work shall be incidental to associated linear grading and drainage excavation

Pay Item 204(13) – Drainage Excavation, Type - Rolling Dip

- Cleaning of existing Rolling Dip is considered 'pre haul maintenance'. (see Timber Sale provision C5.31)
- Grade Dips = GD and Turnout = TO are not a pay item.

Pay Item 650(02) – Remove and Install Road Closure Device, Gate

- No parts of the existing gate is to be reused on this project.
- Furnishing new signs are incidental to pay item. Signs are not to be salvaged material.

Section 703 – Aggregate

- Pit Run material shall conform to the following gradations
- Furnish spalls and rock fragments graded to provide a dense mass.
- The volume of a rock with these cubic dimensions has a mass approximately equal to the specified rock mass.

Percentage of Rock by Mass	Mass (pounds)	Approximate Cubic Dimen- sions (inches)
40	11 to 22	5 to 6
50	1 to 11	2 to 5
10	0 to 1	0 to 2

	Unclassified Borrow, Compaction Method 'C', Finishing Method 'C', Tolerance Class 'K'	Drainage Excavation, Type - LeadOut/LeadIn Ditch	Drainage Excavation, Type - Rolling Dip	Linear Grading	Remove and Replace Structure, Gate	
NFSR 82.1	204(04)	204(13)	204(26)	212(03)	650(02)	
Station	CY	LF	Each	Mile	Each	
0+00						Landmark - NFSR 82.1 Jnct 82.1 & 496.1
7+10						Landmark - Culvert
9+00						BOP - NFSR 82.1 (Begin Reconstruction)
9+20		40				Construct lead out ditch - left & right
9+50						(End Reconstruction)
12+90						Landmark - Cattleguard
22+10						Landmark - Jnct 82.1&82.1A
23+50						(Begin Reconstruction)
24+00					1	
25+00			1			
29+70			1			
31+50						Landmark - existing T/O Potential borrow source
34+70	6					Daylight G/D
38+10	3					Daylight G/D
42+25			1			
46+00			1			
53+40			1			
54+30						Landmark - Jnct with closed road Potential borrow source
57+30			1			
68+15			1			
69+65	3					Repair road
74+70			1			
79+20			1			
83+40			1			
86+30			1			
88+80			1			
91+40	10		1			Begin filling in ditch on right
92+60	↓					End filling in ditch on right
94+00		20				Construct lead out ditch - left
95+85			1			
101+80			1			
103+50						Daylight G/D
105+30						Landmark - Existing T/O
107+50						Daylight G/D
116+70						Landmark - Existing T/O Potential borrow source
116+70				0.01		Expand existing T/O
120+70						Daylight G/D
123+30						Daylight G/D
126+30						Daylight G/D
126+50						(End Reconstruction) EOP - NFSR 82.1
TOTAL	22	60	15	0.01	1	

	Unclassified Borrow, Compaction Method 'C', Finishing Method 'C', Tolerance Class 'K'		
NFSR 82.1A	204(04)		
Station	CY		
0+00			Landmark - NFSR 82.1A Jct 82.1A & 82.1
11+15			Potential borrow source - cut bank
9+00			BOP - NFSR 82.1 (Begin Reconstruction)
9+20	10		Scrape of gravel above above culvert Place fill over culvert so 1' of cover Replace gravel above culvert
9+50			(End Reconstruction) EOP - NFSR 82.1
TOTAL	10		

	Select Borrow, Compaction Method 'C', Finishing Method 'C', Type - Pit Run	Linear Grading	
NFSR 499.1	204(08)	212(03)	
Station	CY	Mile	
0+00			BOP - NFSR 499.1 Landmark - Jct 499.1 & 82.1 (Begin Reconstruction)
1+40			Daylight G/D
2+75			Daylight G/D
4+15			Daylight G/D
5+50			Daylight G/D
7+85	5		Construct armored G/D
9+05			Daylight G/D
10+80			Daylight G/D
14+70		0.1	Expand existing Turnaround
			(Begin Reconstruction) EOP - NFSR 499.1
TOTAL	5	0.1	

**SCHEDULE
OF ITEMS**
(Timber Sale)Timber Sale Encampment Reoffer Timber Sale
Road Name RoadHogRoad No. 82.1
Length (Miles) 1.95

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C. Unit Price	Total
151(01)	Mobilization	LS	Lump Sum	1.00	\$ 2,485.45	\$ 2,485.45
204(04)	Unclassified Borrow, Compaction Method 'C', Finishing Method 'C', Tolerance Class 'K'	CQ	CY	22.00	\$ 16.74	\$ 368.28
204(08)	Select Borrow, Compaction Method 'C', Finishing Method 'C', Type - Pit Run	CQ	CY		\$ -	-
204(13)	Drainage Excavation, Type - LeadOut/LeadIn Ditch	CQ	LF	60.00	\$ 1.16	\$ 69.60
204(26)	Drainage Excavation, Type - Rolling Dip	CQ	Each	15.00	\$ 128.12	\$ 1,921.80
212(03)	Linear Grading	CQ	Mile	0.01	\$ 6,445.03	\$ 64.45
650(02)	Remove and Replace Structure, Gate	AQ	Each	1.00	\$ 867.06	\$ 867.06

SUB-TOTAL: \$5,776.64

TOTAL ALL ROADS: \$6,385.72

**SCHEDULE
OF ITEMS**
(Timber Sale)Timber Sale Encampment Reoffer Timber Sale
Road Name Encampment TrailRoad No. 82.1A
Length (Miles) 0.01

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C. Unit Price	Total
151(01)	Mobilization	LS	Lump Sum	-		
204(04)	Unclassified Borrow, Compaction Method 'C', Finishing Method 'C', Tolerance Class 'K'	CQ	CY	\$ 10.00	\$ 16.78	\$ 167.80
204(08)	Select Borrow, Compaction Method 'C', Finishing Method 'C', Type - Pit Run	CQ	CY	-		
204(13)	Drainage Excavation, Type - LeadOut/LeadIn Ditch	CQ	LF	-		
204(26)	Drainage Excavation, Type - Rolling Dip	CQ	Each	-		
212(03)	Linear Grading	CQ	Mile	-		
650(02)	Remove and Replace Structure, Gate	AQ	Each	-		

SUB-TOTAL: \$167.80

TOTAL ALL ROADS: \$6,385.72

SCHEDULE OF ITEMS—NFSR 499.1

Page 19

Road No.	499.1
Length (Miles)	0.21

[illegible]

SUB-TOTAL: \$441.28

TOTAL ALL ROADS: \$6,385.72

Supplemental Project Specifications

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Preface

Preface_wo_03_15_2004.m

Delete all but the first paragraph and add the following:

The Forest Service, US Department of Agriculture has adopted FP-03 for construction of National Forest System Roads.

101 - Terms, Format, and Definitions

101.00_nat_us_07_25_2005

101.01_nat_us_01_22_2009

101.01 Meaning of Terms

Delete all references to the TAR (Transportation Acquisition Regulations) in the specifications.

101.01_nat_us_01_22_2009

101.01 Meaning of Terms

Delete all references to the FAR (Federal Acquisition Regulations) in the specifications.

101.03_nat_us_06_16_2006

101.03 Abbreviations.

Add the following to (a) Acronyms:

AFPA	American Forest and Paper Association
MSHA	Mine Safety and Health Administration
NIST	<u>National Institute of Standards and Technology</u>
NESC	National Electrical Safety Code
WCLIB	West Coast Lumber Inspection Bureau

.

Add the following to (b) SI symbols:

mp	Milepost
ppm	Part Per Million

101.04_nat_us_03_29_2007

101.04 Definitions.

Delete the following definitions and substitute the following:

Bid Schedule--The Schedule of Items.

Bridge--No definition.

Contractor--The individual or legal entity contracting with the Government for performance of prescribed work. In a timber sale contract, the contractor is the "purchaser".

Culvert--No definition.

Right-of-Way--A general term denoting (1) the privilege to pass over land in some particular line (including easement, lease, permit, or license to occupy, use, or traverse public or private lands), or (2) Real property necessary for the project, including roadway, buffer areas, access, and drainage areas.

Add the following:

Adjustment in Contract Price--"Equitable adjustment," as used in the Federal Acquisition Regulations, or "construction cost adjustment," as used in the Timber Sale Contract, as applicable.

Change--"Change" means "change order" as used in the Federal Acquisition Regulations, or "design change" as used in the Timber Sale Contract.

Design Quantity--"Design quantity" is a Forest Service method of measurement from the FS-96 *Forest Service Specifications for the Construction of Roads and Bridges*. Under these FP specifications this term is replaced by the term "Contract Quantities".

Forest Service--The United States of America, acting through the Forest Service, U.S. Department of Agriculture.

Neat Line--A line defining the proposed or specified limits of an excavation or structure.

Pioneer Road--Temporary construction access built along the route of the project.

Purchaser--The individual, partnership, joint venture, or corporation contracting with the Government under the terms of a Timber Sale Contract and acting independently or through agents, employees, or subcontractors.

Protected Streamcourse--A drainage shown on the plans or timber sale area map that requires designated mitigation measures.

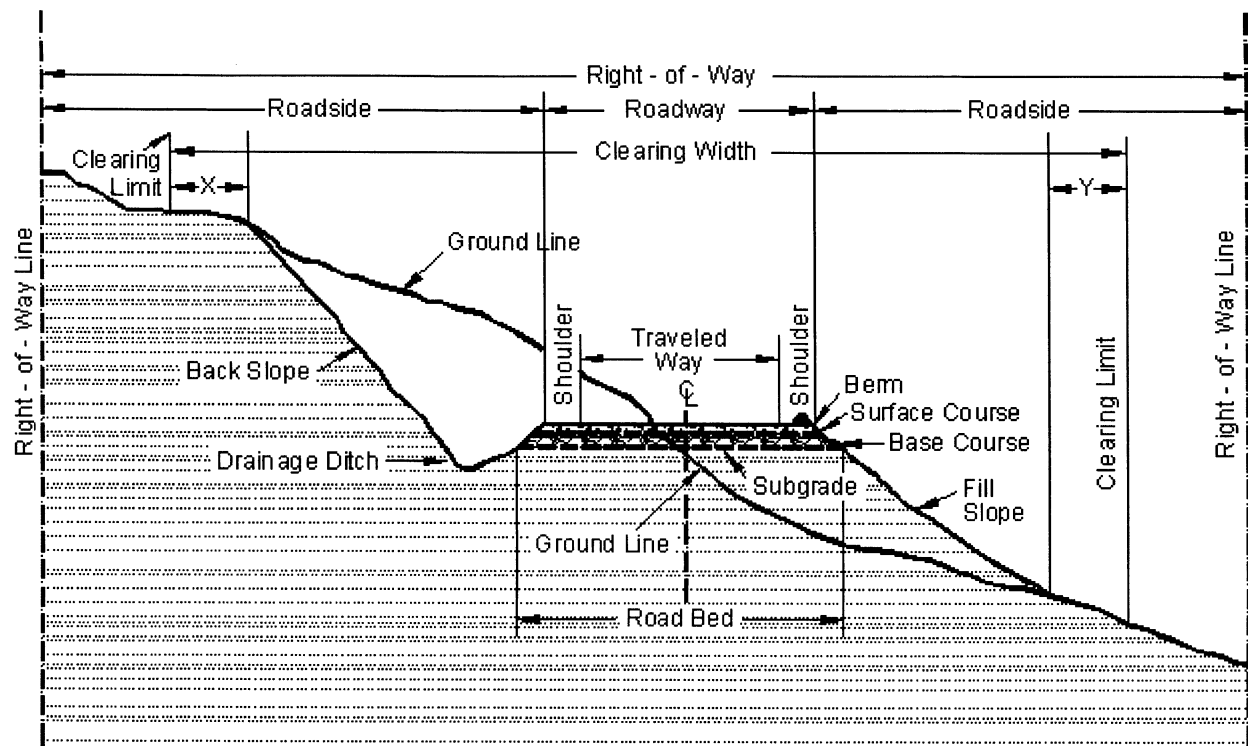
Road Order--An order affecting and controlling traffic on roads under Forest Service jurisdiction. Road Orders are issued by a designated Forest Officer under the authorities of 36 CFR, part 260.

Schedule of Items--A schedule in the contract that contains a listing and description of construction items, quantities, units of measure, unit price, and amount.

Utilization Standards--The minimum size and percent soundness of trees described in the specifications to determine merchantable timber.

Add Figure 101-1--Illustration of road structure terms:

Figure 101-1—Illustration of road structure terms.



Note: Shapes and dimensions will vary to fit local conditions.
See drawings for typical sections.
X and Y denote clearing outside of the final design cross section.

101.04 Definitions.
Delete the following definitions:
Contract Modification
Day
Notice to Proceed
Solicitation

102 - Bid, Award, and Execution of Contract

102.00_nat_us_02_16_2005

102 Bid, Award, and Execution of Contract

Delete Section 102 in its entirety.

103 - Scope of Work

103.00_nat_us_02_16_2005

Deletions

Delete all but subsection 103.01 Intent of Contract.

104 - Control of Work

104.00_nat_us_06_16_2006

Deletions

Delete Sections 104.01, 104.02, and 104.04.

104.03_nat_us_01_22_2009

104.03 Specifications and Drawings.

Delete 104.03.

104.06_nat_us_02_17_2005

Add the following subsection:

104.06 Use of Roads by Contractor

The Contractor is authorized to use roads under the jurisdiction of the Forest Service for all activities necessary to complete this contract, subject to the limitations and authorizations designated in the Road Order(s) or described in the contract, when such use will not damage the roads or national forest resources, and when traffic can be accommodated safely.

105 - Control of Material

105.02_nat_us_02_17_2005

105.02(a) Government Provided Sources.

If the Contractor elects to obtain material from sites staked on the ground by the COR the following applies:

- (a) seed according to section 625
- (b) slope sides according to road template drawing
- (c) shall not impede existing drainage
- (d) undercutting slopes is not permitted

105.05_nat_us_05_12_2004

105.05 Use of Material Found in the Work.

Delete 105.05 (a) and (b) and the last sentence of the second paragraph and substitute the following:

Materials produced or processed from Government lands in excess of the quantities required for performance of this contract are the property of the Government. The Government is not obligated to make reimbursement for the cost of producing these materials.

106 - Acceptance of Work

106.01_nat_us_07_31_2007

106.01 Conformity with Contract Requirements.

Delete Subsection 106.01 and substitute the following:

References to standard test methods of AASHTO, ASTM, GSA, and other recognized standard authorities refer to the methods in effect on the date of solicitation for bids.

Perform all work to the lines, grades, cross-sections, dimensions, and processes or material requirements shown on the plans or specified in the contract.

Incorporate manufactured materials into the work according to the manufacturer's recommendations or to these specifications, whichever is more strict.

Plan dimensions and contract specification values are the values to be strived for and complied with as the design values from which any deviations are allowed. Perform work and provide material that is uniform in character and reasonably close to the prescribed value or within the specified tolerance range. The purpose of a tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons.

When standard manufactured items are specified (such as fence, wire, plates, rolled shapes, pipe conduits, etc., that are identified by gauge, unit mass, section dimensions, etc.), the identification will be considered to be nominal masses or dimensions. Unless specific contract tolerances are noted, established manufacturing tolerances will be accepted.

The Government may inspect, sample, or test all work at any time before final acceptance of the project. When the Government tests work, copies of test reports are furnished to the Contractor upon request. Government tests may or may not be performed at the work site. If Contractor testing and inspection is verified by the Government, the Contractor's results may be used by the Government to evaluate work for acceptance. Do not rely on the availability of Government test results for process control.

Acceptable work conforming to the contract will be paid for at the contract unit bid price. Four methods of determining conformity and accepting work are described in Subsections 106.02 to 106.05 inclusive. The primary method of acceptance is specified in each Section of work. However, work may be rejected at any time it is found by any of the methods not to comply with the contract.

Remove and replace work that does not conform to the contract, or to prevailing industry standards where no specific contract requirements are noted, at no cost to the Government.

(a) Disputing Government test results. If the accuracy of Government test results is disputed, promptly inform the CO. If the dispute is unresolved after reasonable steps are taken to resolve the dispute, further evaluation may be obtained by written request. Include a narrative describing the dispute and a proposed resolution protocol that addresses the following:

- (1) Sampling method;
- (2) Number of samples;
- (3) Sample transport;
- (4) Test procedures;
- (5) Testing laboratories;
- (6) Reporting;
- (7) Estimated time and costs; and
- (8) Validation process.

If the evaluation requires additional sampling or testing be performed, mutually agree with the Government on witnessing procedures and on sampling and testing by a third party laboratory. Use a third party laboratory accredited by the AASHTO accreditation program. Provide proof of the laboratory's accreditation for the test procedures to be used. Do not use the same laboratory that produced the disputed Government test results or that produced the test results used as a basis for the dispute.

The CO will review the proposed resolution protocol and may modify it before final approval and execution. The Government will use the approved resolution protocol test results to determine the validity of the disputed testing. If the Government test results are validated, the Contractor will be responsible for all costs associated with developing and performing the resolution protocol. If the Government test results are not validated, the Government will be responsible for all costs associated with developing and performing the resolution protocol. If the validity of the Government test results cannot be determined, the Contractor and Government will equally share all costs associated with developing and carrying out the resolution protocol.

- (b) **Alternatives to removing and replacing non-conforming work.** As an alternative to removal and replacement, the Contractor may submit a written request to:
- (1) Have the work accepted at a reduced price; or
 - (2) Be given permission to perform corrective measures to bring the work into conformity.

The request must contain supporting rationale and documentation. Include references or data justifying the proposal based on an evaluation of test results, effect on service life, value of material or work, quality, aesthetics, and other tangible engineering basis. The CO will determine disposition of the nonconforming work.

106.07_nat_us_05_11_2004

106.07 Delete

Delete subsection 106.07.

107 - Legal Relations and Responsibility to the Public

107.05_nat_us_05_11_2004

107.05 Responsibility for Damage Claims.

Delete the entire subsection.

107.06_nat_us_06_16_2006

107.06 Contractor's Responsibility for Work.

Delete the following from the first paragraph.

"except as provided in Subsection 106.07".

107.08_nat_us_03_29_2005

107.08 Sanitation, Health, and Safety

Delete the entire subsection.

107.09_nat_us_06_16_2006

107.09 Legal Relationship of the Parties.

Delete the entire subsection.

108 - Prosecution and Progress

108.00_nat_us_02_16_2005

108 Delete.

Delete Section 108 in its entirety.

109 - Measurement and Payment

109.00_nat_us_02_17_2005

109 Deletions

Delete the following entire subsections:

109.06 Pricing of Adjustments.

109.07 Eliminated Work.

109.08 Progress Payments.

109.09 Final Payment.

109.02_nat_us_06_16_2006

109.02 Measurement Terms and Definitions.

(b) Contract quantity.

Add the following:

Contract quantities will be adjusted only when there are errors in the original design of 15% or more.

Change the following:

“(b) Cubic yard” to “(c) Cubic yard”.

Add the following definition:

(p) Thousand Board Feet (MbF). 1,000 board feet based on nominal widths, thickness, and extreme usable length of each piece of lumber or timber actually incorporated in the job. For glued laminated timber, 1,000 board feet based on actual width, thickness, and length of each piece actually incorporated in the job.

109.02_0114_us_06_09_2008

109.02 Measurement Terms and Definitions.

Add the following definition:

(q) Actual quantity. (AQ) These quantities are determined from measurements of completed work.

153 - Contractor Quality Control

153.04_nat_us_10_24_2007

153.04 Records.

Delete all but the first sentence

155 - Schedules for Construction Contracts

155.00_nat.us_05_11_2004

155 Delete.

Delete Section 155 in its entirety.

156 - Public Traffic

156.00_nat_us_04_17_2007

Delete Section 156 in its entirety and replace with the following:

Description

156.01 This work consists of controlling and protecting public traffic adjacent to and within the project.

Material

156.02 Conform to the MUTCD and the following Sections and Subsections:

Construction sign panels	633
Retro-reflective sheeting	718.01
Temporary concrete barrier	618
Temporary plastic fence	710.11
Temporary traffic control devices	718.22

156.03 General. Unless otherwise provided for in Table 156-1, keep existing roads open to all traffic during road improvement work, and maintain them in a condition that will adequately accommodate traffic. Delays may not exceed 30 minutes at any one time followed by an open period of no less than 5 minutes.

Perform no work that interferes or conflicts with traffic or existing access to the roadway surface until a traffic control plan has been approved. Post construction signs and traffic control devices in conformance with MUTCD. All required signs will be in place and approved prior to beginning work on project.

If the Contractor agrees in writing to allow public traffic to use a new road being constructed prior to completion, it will be considered an existing road for traffic control purposes.

156.04 Temporary Traffic Control. Install and maintain temporary traffic control devices adjacent to and within the project as required by the approved traffic control plan and the MUTCD. Install and maintain traffic control devices as follows:

- (a) Furnish and install traffic control devices before the start of construction operations.
- (b) All detours outside of clearing limits will be approved in writing by the Contracting Officer as part of the traffic control plan.
- (c) Install only those traffic control devices needed for each stage or phase.
- (d) Relocate temporary traffic control devices as necessary.
- (e) Remove devices that no longer apply to the existing conditions.
- (f) Immediately replace any device that is lost, stolen, destroyed, or inoperative.
- (g) Keep temporary traffic control devices clean.
- (h) Remove all temporary traffic control devices upon contract completion or when approved.
- (i) When required, use flaggers certified by the American Traffic Safety Services Association, the National Safety Council, the International Municipal Signal Association, a state agency, or other acceptable organization. Perform the work described under MUTCD Part 6. Use type III, VII, VIII, or IX retroreflective sheeting on flagger paddles. Do not use flags. Flaggers must wear high visibility safety apparel as required by MUTCD 6E.02.

156.05 Temporary Closures. Road segments may be closed as shown in Table 156-1. The maximum consecutive days of closure shall be followed by a minimum number of consecutive days open to traffic as shown. Maintain traffic control devices during closure period(s). Appropriate barricades and signs will be erected and maintained as shown in the traffic control plan or as otherwise designated.

Prior to closing roads during construction, give written notice to the Contracting Officer at least 10 days in advance.

Table 156-1
Temporary Road Closures

Road Number	From Terminus	To Terminus	Maximum Consecutive Days of Closure	Minimum Consecutive Days Open

*** Note: NFSR 790.1 **MAY** be temporarily closed by contractor during road reconstruction / construction activities. The closure for road work shall only occur only ONE time, and the closure must start on a Tuesday, Wednesday or Thursday.

Acceptance. Public traffic work will be evaluated under Subsection 106.02.

Measurement and Payment

156.07 Do not measure Public Traffic for payment. Compensation is made as an indirect payment.

201 - Clearing and Grubbing

201.01 Description

201.01_nat_us_02_18_2005

Replace with the following

This work consists of clearing and grubbing within clearing limits and other designated areas.

201.02 Material:

201.00_nat_us_08_05_2009

Delete Tree wound dressing material reference.

201.03 General.

Delete the last sentence.

201.04 Clearing.

Delete the last sentence of (d).

201.04 Clearing. (c)

Delete paragraph (c) and replace with the following:

(c) In areas outside the excavation, embankment, and slope rounding limits, cut stumps to within 12 inches or one-third of the stump diameter of the ground, whichever is higher, measured on the side adjacent to the highest ground. For timber sales, stump heights will meet the requirements of the Timber Sale contract.

201.04 Clearing.

Delete subsection (d) and replace with the following:

(d) Do not cut vegetation less than 3 feet tall and less than 3 inches in diameter, that is within the clearing limits but beyond the roadway and not in a decking area, and that does not interfere with sight distance along the road.

Add the following:

(e) Trim branches of remaining trees or shrubs to give a clear height of 14 feet above the roadbed unless otherwise indicated. Trim tree limbs as near flush with the trunk as practicable.

(f) Remove brush from log decks. Deck logs so that logs are piled parallel to one another; can be removed by standard log loading equipment; will not damage standing trees; will not interfere with drainage, and will not roll. Keep logs in log decks free of brush and soil.

201.06_nat_us_02_18_2005

201.06 Disposal.

Delete the first sentence of this subsection and substitute the following:

Dispose of merchantable timber designated for removal according to the provisions of the timber sale contract.

203 - Removal of Structures and Obstructions

203.01_nat.us_02_25_2005

203.01 Description.

Delete and replace with the following:

This work consists of disposing of construction slash and debris, salvaging, removing, and disposing of buildings, fences, structures, pavements, culverts, utilities, curbs, sidewalks, and other obstructions.

203.04_nat.us_02_18_2005

203.04 Removing Material.

Replace the fourth and fifth paragraphs with the following:

Where part of an existing culvert is removed, remove the entire culvert upstream from the removal. The remaining downstream culvert may be left in place if no portion of the culvert is within 12 inches of the subgrade, embankment slope, or new culvert or structure; and the culvert ends are sealed with concrete.

Remove structures and obstructions in the roadbed to 12 inches below subgrade elevation. Remove structures and obstructions outside the roadbed to 12 inches below finished ground or to the natural stream bottom.

203.05_0114_us_02_15_2005

203.05 Disposing of Material.

(a) Remove from project.

Delete the last two sentences

203.05_nat.us_02_18_2005

203.05 Disposing of Material.

Add the following:

(e) **Windrowing Construction Slash.** Place construction slash outside the roadway in neat, compacted windrows approximately parallel to and along the toe/line of embankment slopes. Do

not permit the top of the windrows to extend above subgrade. Use construction equipment to matt down all material in a windrow to form a compact and uniform pile. Construct breaks of at least 15 feet at least every 200 feet in a windrow. Do not place windrows against trees. Obtain approval for pioneer roads. A pioneer road may be constructed to provide an area for placement of windrows, provided the excavated material is kept within the clearing limits and does not adversely affect the road construction.

(f) Scattering. Scatter construction slash outside the clearing limits without damaging trees. Limb all logs. Place logs and stumps away from trees, positioned so they will not roll, and are not on top of one another. Limb and scatter other construction slash to reduce slash concentrations.

(g) Chipping or Grinding. Use an approved chipping machine to grind slash and stumps greater than 3 inches in diameter and longer than 3 feet. Deposit chips or ground woody material on embankment slopes or outside the roadway to a loose depth less than 6 inches. Minor amounts of chips or ground woody material may be permitted within the roadway if they are thoroughly mixed with soil and do not form a layer.

(h) Debris Mat. Use tree limbs, tops, cull logs, split stumps, wood chunks, and other debris to form a mat upon which construction equipment is operated. Place stumps upside down and blend stumps into the mat.

(i) Decking Firewood Material. Remove brush from decks. Limb and deck logs that do not meet Utilization Standards according to Subsection 201.04 as directed by the CO. Cut logs to lengths less than 30 feet. Ensure that logs stacks are stable and free of brush and soil.

(j) Removal to designated locations. Remove construction slash to designated locations.

(k) Piling. Pile construction slash in designated areas. Place and construct piles so that if the piles are burned, the burning will not damage remaining trees. Keep piles free of dirt from stumps. Cut unmerchantable logs into lengths of less than 20 feet.

(l) Placing Slash on Embankment Slopes. Place construction slash on completed embankment slopes to reduce soil erosion. Place construction slash as flat as practicable on the completed slope. Do not place slash closer than 2 feet below subgrade. Priority for use of available slash is for: (1) through fills; (2) insides of curves; and (3) ditch relief outlets.

(m) Hydrological Sensitive Placement. Where required use this method in combination with other designated methods to dispose of material to reduce erosion and to aid in re-vegetation:

1. Place windrow segments on contours, wrap in type I geotextile.
2. Place logs as log erosion barriers on contours. Place logs so that 80% of their length is on the ground surface.
3. Scatter slash on bare or disturbed areas within or outside the clearing limits as directed.
4. Scatter chips or ground woody material on bare or disturbed areas within or outside the clearing limits as directed.

Place stumps in swales or on sites to form planting pockets. Place windrow segments on contours, wrap in type I geotextile.

203.08 Payment

Add the following:

Disposal of construction slash will be compensated under the designated pay item in Section 201.

204 - Excavation and Embankment

204.05_nat_us_02_18_2005

204.05 Conserved Topsoil

Delete the entire paragraph.

204.06_nat_us_03_02_2005

204.06 Roadway Excavation

(a) General.

Add the following:

Retrieve material deposited outside of the clearing limits as directed by the CO. Place unsuitable material in designated areas.

204.06_nat_us_03_02_2005

204.06 Roadway Excavation.

Add the following:

d) Pioneer Roads. Road pioneering, slash disposal, and grubbing of stumps may proceed concurrently with excavation. Conduct excavation and placement operations so material to be treated under Section 201 will not be incorporated into the roadway unless specified in the slash treatment method. Maintain drainage during pioneering operations.

Remove snow and ice in advance of the work and deposit beyond the roadway limits in a manner that will not waste material or generate sediment. Do not incorporate snow and ice into embankments. Place snow or ice in a manner to prevent resource damage.

204.09_nat_us_03_02_2005

204.09 Preparing Foundation for Embankment Construction.

Delete subsection (a) and replace it with the following:

(a) Embankment less than 4 feet high over natural ground. When designated, remove topsoil and break up the ground surface to a minimum depth of 6 inches by plowing or scarifying. Compact the ground surface according to Subsection 204.11.

204.10_nat_us_03_02_2005

204.10 Embankment Construction.
Add the following:

Obtain written approval before beginning construction of embankments over 6 feet high at subgrade centerline.

(a) General.

Delete the third paragraph and add the following:

Compact embankment side slopes flatter than 1V:1.75H with a tamping type roller or by walking with a dozer. For slopes 1V:1.75H or steeper, compact the slopes as construction of the embankment progresses.

204.11_nat_us_04_11_2005

204.11 Compaction.

Delete the first paragraph and replace it with the following:

For compaction according to method (a), (b), or (c), use AASHTO T 27 to determine the amount of material retained on a Number 4 sieve. For compaction methods (d) or (e) no sieve test is required.

Add the following compaction methods:

(d) Layer Placement Method (Hauling and Spreading Equipment). Place material by end dumping to the minimum depth needed for operation of spreading equipment. Level and smooth each embankment layer before placing the next layers. Operate hauling and spreading equipment uniformly over the full width of each layer. Construct a solid embankment with adequate compaction by working smaller rock and fines in with the larger rocks to fill the voids—and by operating hauling and spreading equipment uniformly over the full width of each layer as the embankment is constructed.

(e) Layer Placement (Roller Compaction) Method. Place material by end dumping to the minimum depth needed for operation of spreading equipment. Adjust the moisture content of the material to obtain a mass that will not visibly deflect under the load of the hauling and spreading equipment. Operate compaction equipment over the full width of each layer until visible deformation of the layer ceases or, in when a sheepfoot roller is used, the roller “walks out” of the layer. Make at least three complete passes.

204.13 Sloping, Shaping, and Finishing.**(a) Sloping.**

Add the following:

Slope rounding is not required on tolerance class D through M roads.

204.13_nat_us_03_02_2005

204.13 Sloping, Shaping, and Finishing.

Delete section (d) and add the following:

(d) Finishing. For surfaced roads, remove all material larger than 6 inches from the top 6 inches of the roadbed. For all roads, finish the roadbed to be smooth and uniform, and shaped to conform to the typical sections. Remove unsuitable material from the roadbed and replace it with suitable material. Finish roadbeds to the tolerance class shown in table 204-2.

Ensure that the subgrade for both surfaced and unsurfaced roads is visibly moist during shaping and dressing. Scarify to 6 inches below the bottom of low sections, holes, cracks, or depressions and bring back to grade with suitable material. Maintain proper ditch drainage.

For unsurfaced roads, use one of the following methods to finish the roadbed:

- (1) Method A. Remove all material larger than 6 inches from the top 6 inches of the roadbed and replace with suitable material.
- (2) Method B. Use a vibratory grid roller or approved equal with a minimum weight of 10 tons. Roll at least 5 full-width passes or until visible displacement ceases.
- (3) Method C. For roads designated as Construction Tolerance Class K, L, or M, finish the roadbed by spreading the excavation. Eliminate rock berms.

Add Table 204-2—Construction Tolerances:

Table 204-2 Construction tolerances.

	Tolerance Class ^(a)												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Roadbed width (ft)	+0.5	+0.5	+1.0	+1.0	+1.0	+1.0	+1.5	+1.0	+2.0	+2.0	+2.0	+2.0	+2.0
Subgrade elevation (ft)	±0.1	±0.2	±0.2	±0.5	±0.5	±1.0	±1.0	±1.5	±2.0	±3.0	±2.0	±3.0	(c)
Centerline alignment (ft)	±0.2	±0.2	±0.5	±0.5	±1.0	±1.0	±1.5	±1.5	±2.0	±3.0	±3.0	±5.0	(c)
Slopes, excavation, and embankment (% slope ^(b))	±3	±5	±5	±5	±5	±5	±10	±10	±10	±10	±20	±20	±20

a. Maximum allowable deviation from construction stakes and drawings.

b. Maximum allowable deviation from staked slope measured from slope stakes or hinge points.

c. Unless otherwise shown the centerline alignment and subgrade elevation, as built, have no horizontal curves with a radius of less than 80 feet, and no vertical curves with a curve length of less than 80 feet when the algebraic difference in the grade change is less than 10 percent, or a curve length of less than 100 feet when the algebraic difference of the grade change is greater than or equal to 10 percent. The centerline grade is not to exceed 20 percent in 100 feet of length.

204.14_nat.us_03_02_2005

204.14 Disposal of Unsuitable or Excess Material.

Delete the text of the first paragraph and substitute the following:

Dispose of unsuitable or excess material at designated sites or legally off of the project.

204.15_nat.us_02_07_2007

204.15 Acceptance

Table 204-1 Sampling and Testing Requirements.

Add the following note to the table:

(2) When compaction methods (d) or (e) are used AASHTO M 145, T 99, T 180, and T 310 are not required for earth embankment test methods.

635 - Temporary Traffic Control

635.03_nat_us_05_13_2004

635.03 General.

Add the following:

Install temporary traffic control signs to temporary posts or approved temporary sign mounts.

650 - Road Closure Devices

650.00_nat_us_06_28_2007

Description

650.01 Work. Furnish and install, or install only, road closure devices using fabricated gates and accessories, combination post and rail barriers, concrete barriers, earth mound barriers, and other devices.

Materials

650.02 Requirements. Furnish materials to be used in fabricating gates and barriers. Ensure that all hardware is galvanized in accordance with AASHTO M 232 and meets the requirements of ASTM A 307. Furnish plain or cut washers that are American Standard Washers.

Furnish timber posts, rails, and lumber that meet the requirements of AASHTO M 168. Provide timber of the species and type, and rate of preservative treatment.

Furnish concrete that meets the requirements of Subsection 601.03, method B or C.

Construct earth mound barriers from excavated material adjacent to the barrier location, or from other designated locations.

Construction

650.03 Performance. Place road closure devices at designated locations. Construct all devices to the required dimensions. In assembling gates, perform required welding in accordance with the best modern practice and the applicable requirements of AWS D1.1.

After assembly, clean non-galvanized steel pipe gates and paint them with one coat of zinc-rich primer and two coats of exterior enamel of the required type and color.

Set all posts vertically and embed them to the required depth. Place concrete for embedment against undisturbed earth within an excavation sized to achieve the embedment dimensions. Compact the backfill in 6 inch layers to finished grade.

Furnish and install all signs and/or reflective warning markers accessory to the road closure device.

650.04 Acceptance. Construction of road closure devices will be evaluated under Subsections 106.02 and 106.04.

Measurement

650.05 Measure the items listed in the bid schedule according to Subsection 109.02.

Payment

650.06 The accepted quantities, measured as provided in Subsection 109.02 and above, will be paid at the contract price per unit of measurement for the Section 650 pay item listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

718 - Traffic Signing and Marking Material

718.05_nat_us_08_05_2009

718.05 Aluminum Panels

Delete the third paragraph and replace with the following:

Clean, degrease and properly prepare the panels according to methods recommended by the sheeting manufacturer. Conversion coatings will conform to ASTM B-921 or ASTM B-449.